

AMENDMENTS TO THE SPECIFICATION:

At page 14, paragraph 2, starting on line 10, please change to read as follows:

【0052】

[1] In order to achieve the above-mentioned object, a router according to the present invention comprises: transferring means for transferring a first path message transmitted from a first host to a second host to make a resource reservation in compliance with a resource reservation protocol, and a first reservation message transmitted from the second host to the first host in response to the first path message; storage means for storing an encapsulated destination address associated with an address of the second host upon encapsulating and transferring a packet addressed to the second host; and proxy resource reservation means for obtaining the encapsulated destination address from the address of the second host, and for transmitting a second path message in a non-capsulated state to make a resource reservation with a same communication quality as that of the first path message to the encapsulated destination address (~~claim-1~~).

At page 15, paragraphs 4 and 5, starting on line 18, please change to read as follows:

【0056】

In this case, the second host may comprise a mobile node, which may comprise a mobile terminal including a portable terminal, a notebook-type terminal, or a fixed-type terminal (~~claims-2 and 3~~).

Also, in the router according to the present invention, when the storage means newly store or update the encapsulated destination address in association with the address of the second host by receiving a location registering message from the second host after the resource reservation between the first and the second host is made, the proxy resource reservation means

may transmit the second path message in a non-capsulated state to the encapsulated destination address newly stored or updated (~~claim-4~~).

At page 16, paragraph 1, starting on line 9, please change to read as follows:

【0058】

Also, in the router according to the present invention, the transferring means may transfer the second path message transmitted by another router and a second reservation message in response to the second path message, the storage means may store the encapsulated destination address and a re-encapsulated destination address associated with the address of the second host, and the proxy resource reservation means may obtain the re-encapsulated destination address from the encapsulated destination address, and may transmit a third path message in a non-capsulated state to make a resource reservation with a same communication quality as that of the second path message to the re-encapsulated destination address (~~claim-5~~).

At page 16, last line and continuing to page 17 through page 20, please change to read as follows:

【0060】

In this case, when the storage means update the re-encapsulated destination address stored in association with the address of the second host by receiving a location registering message from the second host after the resource reservation is made between the first and the second host, the proxy resource reservation means may resend the third path message in a non-capsulated state to the updated re-encapsulated destination address (~~claim-6~~).

【0061】

By this third path message, the resource reservation with the same communication quality as that of the second path message, namely, the same communication quality as that of the first path message, is made in an encapsulation-and-transfer section between the router and the point of the re-encapsulated destination address after the location registration.

Thus, even if a section where the packet addressed to the second host is encapsulated newly arises by the movement of the second host after the resource reservation is made between the first host and second host, the resource reservation in this section can be made.

【0062】

Also, the router according to the present invention may be provided in a position nearer to the first host, and after receiving information associating the address of the second host with the encapsulated destination address as a cache notification from another router, may encapsulate and transfer a packet addressed to the second host to the encapsulated destination address, and when the cache notification is received after the resource reservation between the first and the second host is made, the proxy resource reservation means may transmit the second path message in a non-capsulated state to the encapsulated destination address (~~claim 7~~).

【0063】

By this second path message, the resource reservation with the same communication quality as that of the first path message is made in a section (encapsulation-and-transfer section) between the router and the point of the encapsulated destination address after the location registration.

Thus, the resource reservation in a section where the packet is encapsulated can be made, even in case of a router provided in a position nearer to the first host which is able to shorten the transfer route by encapsulating the packet addressed to the second host.

【0064】

In this case, the router according to the present invention may request the other router to transmit the cache notification, or the other router may transmit the cache notification upon receipt of a location registering message from the second host (~~claims 8 and 9~~).

【0065】

Also, in the router according to the present invention, the above-mentioned proxy resource reservation means may determine whether or not the resource reservation between the first and the second host is made based on a generation state of a path state generated by the transferring means upon receipt of the first or the second path message, or of a reservation state generated by the transferring means upon receipt of the first or the second reservation message (~~claim 10~~).

【0066】

Namely, the transfer means generate a path state upon receipt of the first or the second path message, and generate a reservation state upon receipt of first or the second reservation message. The proxy resource reservation means determine whether or not the resource reservation between the first and the second host is made based on a generation state of a path state or a reservation state.

【0067】

Also, in the router according to the present invention, upon storing a same encapsulated destination address associated with a plurality of the second host addresses, the storage means may store an identifier capable of uniquely identifying an attribute of a received packet per address of each second host in combination with the same encapsulated destination address, and the transferring means and the proxy resource reservation means may respectively include the identifier in an encapsulation header upon encapsulating and transferring the received packet and in the second path message (~~claim 11~~).

【0068】

Thus, for a plurality of second hosts, the resource reservation in a section where the packet is encapsulated can be made per second host based on the identifier.

In this case, another router may make the resource reservation per identifier based on the identifier (~~claim-12~~).

【0069】

It is to be noted that the above-mentioned resource reservation protocol may comprise an RSVP (~~claim-13~~).

Also, the router according to the present invention may not transfer but hold the first reservation message until a second reservation message in response to the second path message is received (~~claim-14~~).

【0070】

Thus, it is made possible to prevent the first host from receiving a notification of completion before the resource reservation in the section where the packet is encapsulated is completed.

Moreover, the router according to the present invention may transmit an error message, when a resource reservation by the second path message has failed, for notifying that the resource reservation was not made, instead of transferring the first reservation message (~~claim-15~~).

【0071】

Thus, it is made possible to prevent the first host from receiving a notification of completion despite the resource reservation has failed in the section where the packet is encapsulated.

It is to be noted that the second path message may be transmitted when the first reservation message is received, while it is possible to transmit the second path message immediately after

encapsulating the first path message if the destination in the encapsulation-and-transfer section is preliminarily known.

【0072】

[2] Also, in order to achieve the above-mentioned object, a communication network system according to the present invention comprises: a first host for transmitting a first path message to make a resource reservation in compliance with a resource reservation protocol; a second host for transmitting a first reservation message to the first host in response to the first path message; and a first router for storing an encapsulated destination address associated with an address of the second host upon encapsulating and transferring a packet addressed to the second host, for obtaining the encapsulated destination address from the address of the second host, and for transmitting a second path message in a non-capsulated state to make a resource reservation with a same communication quality as that of the first path message to the encapsulated destination address (claim 16).

At page 21, last paragraph and continuing to page 22, paragraphs 1 and 2, please change to read as follows:

【0077】

Thus, the resource reservation can be made in a section where the first path message is encapsulated.

In this case, the second host may comprise a mobile node, which may comprise a mobile terminal including a portable terminal, a notebook-type terminal, or a fixed-type terminal (claims 17 and 18).

【0078】

Also, in the communication network system according to the present invention, when newly storing or updating the encapsulated destination address in association with the address of the second host by receiving a location registering message from the second host after the resource reservation between the first and the second host is made, the first router may transmit the second path message in a non-capsulated state to the encapsulated destination address newly stored or updated (~~claim 19~~).

At page 23, paragraph 3, starting on line 7, please change to read as follows:

【0082】

Thus, even if a section where the packet addressed to the second host is encapsulated newly arises by the movement of the second host after the resource reservation is made between the first host and second host, the resource reservation in this section can be made.

Also, the communication network system according to the present invention may further comprise a second router provided on a route where a packet addressed to the encapsulated destination address is re-encapsulated and transferred to the second host for storing the encapsulated destination address and a re-encapsulated destination address associated with the address of the second host when the packet is re-encapsulated and transferred, for obtaining the re-encapsulated destination address from the encapsulated destination address, and for transmitting a third path message in a non-capsulated state to make a resource reservation with a same communication quality as that of the second path message to the re-encapsulated destination address (~~claim 20~~).

At page 24, paragraph 5, starting on line 19, please change to read as follows:

【0087】

Thus, the resource reservation in the section where the second path message transmitted from the first router is re-encapsulated by the second router can be made.

Also, in the communication network system according to the present invention, when the second router updates the re-encapsulated destination address stored in association with the address of the second host by receiving a location registering message from the second host after the resource reservation is made between the first and the second host, the second router may transmit the third path message in a non-capsulated state to the updated re-encapsulated destination address (~~claim-21~~).

At page 25, last paragraph, starting on line 30, please change to read as follows:

[0092]

Also, the communication network system according to the present invention may further comprise a second router, provided in a position nearer to the first host, for encapsulating and transferring a packet addressed to the second host to the encapsulated destination address after receiving information associating the address of the second host with the encapsulated destination address as a cache notification from the first router, and for transmitting the second path message in a non-capsulated state to the encapsulated destination address when the cache notification is received after the resource reservation between the first and the second host is made (~~claim-22~~).

At page 27, paragraph 1 through page 29, please change to read as follows:

[0096]

Thus, the resource reservation in a section where the packet is encapsulated can be made by the second router which is able to transfer the packet addressed to the second host by shortening, or optimizing, the transfer route.

In the communication network system according to the present invention, the first router may transmit the cache notification to the second router in response to a request from the second

router, or the first router may transmit the cache notification to the second router upon receipt of a location registering message from the second host (~~claims 23 and 24~~).

【0097】

Also, in the communication network system according to the present invention, the first router or the second router may determine whether or not the resource reservation between the first and the second host is made based on a generation state of a path state generated upon receipt of the first or the second path message, or of a reservation state generated upon receipt of the first or the second reservation message (~~claim 25~~).

【0098】

Namely, the first or the second router generates a path state upon receipt of the first or the second path message, and a reservation state upon receipt of the first or the second reservation message. Then, the first or the second router determines whether or not the resource reservation between the first and the second host is made based on a generation state of the path state or the reservation state.

【0099】

Also, in the communication network system according to the present invention, upon storing a same encapsulated destination address associated with a plurality of the second host addresses, the first router may store an identifier capable of uniquely identifying an attribute of a received packet per address of each second host in combination with the same encapsulated destination address, and may include the identifier in an encapsulation header upon transferring the received packet by encapsulation and in the second path message (~~claim 26~~).

【0100】

Namely, when the same encapsulated destination address is associated with a plurality of second host addresses, an identifier stored by the first router for each of the second host addresses in combination with the encapsulated destination address is capable of uniquely identifying an attribute of a received packet per address of each second host. Also, the first router includes the identifier in an encapsulation header upon transferring the received packet by encapsulation and in the header of the second path message.

【0101】

Thus, for a plurality of second hosts, resource reservation in a section where the packet is encapsulated can be made per the second host based on the identifier.

In this case, the communication network system according to the present invention may further comprise a second router for making a resource reservation with the second path message, and for making the reservation per identifier (~~claim 27~~).

【0102】

Namely, the second router makes the resource reservation per identifier included in the header of the second path message.

It is to be noted that the above-mentioned resource reservation protocol may comprise an RSVP (~~claim 28~~).

Also, in the communication network system according to the present invention, the first router may not transfer but hold the first reservation message until a second reservation message in response to the second path message is received (~~claim 29~~).

【0103】

Thus, it is made possible to prevent the first host from receiving a completion notification before the resource reservation in the section where the packet is encapsulated is completed.

Moreover, in the communication network system according to the present invention, the first router may transmit an error message for notifying that the resource reservation was not made when a resource reservation by the second path message has failed, instead of transferring the first reservation message (~~claim 30~~).